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PUBLIC HEALTH, CULTURE, AND COLONIAL MEDICINE: SMALLPOX AND VARIOLATION IN PALESTINE DURING THE BRITISH MANDATE

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In December 1921, in the Arab village of Duwaimeh near Hebron, an epidemic of smallpox broke out following variolation of the population. This practice of variolation included taking material from the blister of a sick person and purposely inoculating another healthy individual. It was carried out mainly by local healers and was a common practice among the local population at the time.

This article reviews the history of smallpox in Palestine during the British Mandate, focusing on the smallpox outbreak in Duwaimeh and the interrelationship between the local population and British Mandate authorities in the course of dealing with the epidemic. Vintage photos from the period found at the Israeli Public Health Central Laboratories in Jerusalem reveal that attempts by Mandatory physicians to carry out a mass vaccination of villagers were met initially by fierce opposition. In the course of the vaccination campaign, village children were hidden in caves and other hideaways in the vicinity out of fear of their being vaccinated.

Among all the colonial powers around the world, public health and addressing outbreaks of contagious diseases were among key issues of concern in the handling of local administration for both colonial regimes and the medical community. Much has been written in recent years about the link between health and colonialism, recognizing the tension that existed between Western and local medicine as an important dimension of the history of colonialism.[1–3] This article analyzes these aspects by examining how various parties reacted to the outbreak in the context of their different understandings of the disease and its possible prevention. It is also an opportunity to reconstruct the Palestinian rural context that existed in Palestine at the turn of the 20th century and almost disappeared after the establishment of Israel.

COLONIAL MEDICINE IN CONTEXT

As historians of colonial medicine have shown, colonial medicine occupied a place within a more expansive ideological order of the empires.[1–4] Colonial efforts to deal with the health of developing regions were closely linked to the economic interests of the colonizers. Health was not an end in itself, but rather a prerequisite for colonial development. Colonial medicine, or "tropical medicine," as it was called during the late 19th century, was concerned primarily with maintaining the health of Europeans living in the tropics, because these individuals were viewed as essential to the colonial project's success. The health of the colonized subjects was normally only considered when their ill health threatened colonial economic enterprises or the health of the Europeans. Accordingly, the success or failure of health interventions was measured more in terms of the colonies' production than by measuring the levels of health among the native population.

Another aspect of this logic was that colonial governments usually did little to build rural health services for the general native populations. Rural services, when they did exist, were run by missionaries and focused primarily on maternal and child health. For most rural inhabitants, contact with Western medical services was limited to occasional medical campaigns such as mass vaccinations during infectious disease epidemics. Yet, though this policy left a broad field for action by local traditional healers, colonial medical authorities generally discounted the medical knowledge of local populations, and at times persecuted indigenous health practitioners. Though there were important exceptions to this pattern—such as in colonial India, where British doctors drew on local knowledge both for identification of local illnesses and for expanding their pharmaceutical knowledge by incorporating local plants and herbs—in general, disapproval of knowledge and practices was the rule.[5]

Another characteristic of colonial medicine was that it tended to be narrowly technical in both its design and implementations. Health was defined during the pre–World War II era as mainly the absence of disease, and could therefore be achieved by understanding and developing methods for attacking specific diseases, mainly those that were infectious, one at a time. This narrow "disease" approach to health and illness appeared to be cheaper and more manageable than efforts to improve the general health and well-being of

colonial subjects through social and economic development. Colonial authorities viewed both the provision of broad-based health care and efforts to deal with the underlying social and economic determinants of illness as both impractical and unnecessary.

HEALTH IN PALESTINE

At the turn of the 20th century, Palestine was a distant part of the Ottoman Empire. Infectious disease rates were high. Malaria and trachoma were common ailments.[6–8] As several historians of medicine have described in their work on the everyday experiences of health and disease, we should remember that "epidemic streets" were an everyday encounter in many places for the local population, in Palestine as well as in other parts of the world.[9] High infant mortality rates, as well as infectious diseases such as cholera, dysentery, malaria, and tuberculosis, had a strong impact on daily life.[7]

On several levels, circumstances in Palestine were conducive to illness and disease. The geography did not provide an easy living, comprising a relatively small area with both swamps and deserts. This territory was on the Islamic pilgrims' path on their way to and from Mecca, providing the opportunity for a steady influx of disease carriers. During the 19th century, the population of Palestine suffered from repeated cholera epidemics transmitted by pilgrims returning from Mecca and, during the First World War, by Turkish soldiers crossing the country. Most of the epidemics occurred in the old cities such as Jerusalem, Tiberias, and Jaffa, where infrastructure was inadequate.[10] Poverty, backwardness, absenteeism of the local elite, and the frequent incompetence and indifference of the central government, with its resulting lack of effective social administration, further prepared the ground for an easy spread of diseases.

Based on their patterns of life, the local Arab Palestinian population belonged to three distinct ethnic groups: peasants (fallahin), the urbanized (hadar), and nomads and semi-nomad Bedouin tribes (badu).[11] During the Ottoman rule, the local population relied mainly on traditional medicine, including herbal medicine, bone-setting, cauterization, blood-letting, leeching, cupping, as well as amulet writers, midwives, and male religious healers.[12]

The Ottoman public health system was influenced by increasing contact between the Ottoman Empire and the European military, commerce, and science, which triggered various reform movements (*Tanzimat*). While reforms regarding health-care institutions were hardly felt in Palestine, the economy experienced a marked improvement. Coastal towns in particular benefited from the increasing European influence and improved infrastructure.[13,14] However, the overwhelming majority of Palestinians remained peasants, vulnerable to social and economic inadequacies. At the beginning of the 20th century, the area was still relatively underdeveloped even within an Arab context.[6,8]

The First World War, in which Palestine was one of the battlegrounds, disrupted local life. Ottoman authorities arrested both Arab and Jewish Zionist leaders, killing some; they conscripted tens of thousands of Arab farmers, deforested large areas, and commandeered crops and livestock. As a result, the population declined substantially. Those that remained faced starvation and political chaos and were therefore easy prey to infectious diseases. Many health institutions, especially those that offered free treatment, shut down or limited their operation drastically due to lack of resources and budgetary constraints. The local population had to rely primarily on their traditional medicine.[12]

On December 9, 1917, as World War I neared its end, Jerusalem surrendered to the British forces. This act marked the end of four centuries of Ottoman rule. British officials arriving in Palestine were confronted with a poverty-stricken population of approximately 600,000 Arabs and 85,000 Jews. The most immediate task of the occupying British forces was to provide food and medical supplies and to restore social and economic order.[15]

According to the *Interim Report on the Civil Administration of Palestine,* the British forces found "a country exhausted by war. The population had been depleted; the people of the towns were in severe distress; much cultivated land was left untilled; the stocks of cattle and horses had fallen to a low ebb; the woodlands, always scanty, had almost disappeared; orange groves had been ruined by lack of irrigation; commerce had long been at a standstill."[16]

In July 1920, the British Mandate civil administration took over from the military. Public health was among the first concerns of the new rule, as expressed in various early written reports: "Both the Military and the Civil Administrations have paid the closest attention to measures for safeguarding the health of the population. The Department of Public Health has a fully organized central and local establishment. The sanitation of the towns is efficiently supervised. A quarantine service is maintained . . . at the present time the Government maintains 15 hospitals, 21 dispensaries, eight clinics, and five epidemic posts."[16]

The British government focused first and foremost on ridding Palestine of infectious diseases. The government embarked on installing new sewage and drain-

age systems, invested in swamp drainage projects and hygiene education campaigns, and established a school hygiene service. It also instituted the registration of all cases of infectious diseases and decreed several ordinances related to medical and public health matters, such as licensing of various health-care professions, instituting pharmaceutical and food regulations, and strengthening quarantine measures.[17] All of these measures, however, were only partially implemented or limited in scope, and investment was restricted. The British administration did not hesitate to rely on outside sources for the advancement of public health.[18]

Although state hospitals that treated mostly Arab populations in urban areas were scarce at first, during the British mandate the system was gradually expanded due to demand from the local Arab population.[12] Where access to state hospitals was problematic, the Arab population depended on the Christian missionary health services. Interestingly, the Jewish community developed its own medical services as part of the Zionist enterprise, which included other welfare aspects. The two main Jewish health-care organizations, Hadassah and the General Sick Fund (Kupat Holim Clalit), also treated Arabs. But in general, medical relations between Arabs and Jews during the Mandate were informal, based mainly on private initiatives. Jewish physicians treated private Arab patients in towns and villages, especially where state hospitals and clinics were scarce. Sometime Jews, especially of Oriental descent, were treated by Arab physicians.[11]

Although Palestine was not a British colony, it was run like a colony, without local representation and under tight supervision from London. British authorities proceeded to govern the area much like a regular colony, though incorporating it fully into its empire. The British Mandate in Palestine hopelessly tried to accomplish two contradictory goals: to create a Jewish national home while also protecting the rights of the local Arab population. The inconsistency within British policy and contradicting expectation of Palestinian Arabs and the Zionist Jewish community were expressed already in the Balfour Declaration, a letter dated November 2, 1917, from the British Foreign Secretary Arthur James Balfour, which supported Zionist plans for a Jewish "national home" in Palestine. According to the Palestinian Arab community interpretation, this letter contradicted other British promises that supported the Arab vision for Palestine after the war. This tension continued to exist over the whole Mandate period, when both sides—Arab and Jewish—were dissatisfied with the British administration's treatment of Palestine.[19] Apart from that, what makes the British Mandate period a unique case study is the side-by-side coexistence of the British administration, the Zionist bodies with their health organizations such as Hadassah and the General Sick Fund (Kupat Holim Clalit), religious-related health institutions, and other international health enterprises, each with its own agenda and strong emphasis on public health issues. If we add to that the local Palestinian Arab inhabitants, as well as Jewish people and their interaction, we have an intricate network that demands its investigation for studying the complexities of the country's social history.

Meanwhile, the Arab and the growing Jewish communities cooperated to some extent with British institutions, but in parallel retained and built up internal quasi-governmental bodies. To sum up the situation: "Interwar Palestine was one territory, inhabited by two ethnic communities of three religions, governed by four administrative structures."[6]

In the next sections, we will take a specific case study to illuminate these complexities. We describe a unique smallpox outbreak and its control by the British authorities as it unfolded. But first, we provide some background on smallpox in Palestine and the British Public Health Administration.

SMALLPOX IN PALESTINE

Smallpox, a viral disease that was officially eradicated in 1980, was a significant infectious disease throughout history.[20] It is very contagious, resulting in about 30% mortality. It was also the first disease against which a vaccine was developed—by Edward Jenner in 1796 as an empirical tool, as the cause of the disease was as yet unknown.

In Palestine, several outbreaks were recorded during the 19th and early 20th centuries, as well as sporadic cases imported from endemic areas.[21,22] The British physician Ernst Masterman wrote of "an utterly unchecked epidemic" of smallpox in Jerusalem in 1900.[23]

As described previously, similar to other infectious diseases, one of the main routes of infection was the Moslem pilgrimage to Mecca.[17] During the Ottoman rule, vaccinations against smallpox were carried out only sporadically. According to an estimate, only about 10% of the local population was ever vaccinated.[22]

The British Health Services for Palestine commenced its activities in December 1917 after the occupation of Jerusalem and Jaffa, when the military campaign in Palestine was still not completed. According to the annual report of the British Department of Health, "There were few relics to be found of any preexisting Government Heath Services, and the testimony of pre-war residents confirmed the absence of any such organization."[17] While this British description can be

regarded as biased, it is reasonable to say that due to lack of comprehensive and coordinated medical services under Ottoman rule and the harsh conditions during the First World War, British officials arriving in Palestine were confronted with a poverty- and disease-stricken population. In 1922, the British undertook the first census of the mandate. The population was 752,048, comprising 589,177 Muslims (78%), 83,790 Jews (11%), 71,464 Christians (10%), and 7,617 people (1%) belonging to other groups.[24] As described previously, both Jewish and Arab communities exhibited a high incidence of disease and famine that raised mortality rates among all segments of society: Muslim, Christian, and Jewish.

The British administration in Palestine was quick to adopt public health legislation. By May 16, 1918, Public Health Ordinance No. 1 was released to "regulate the General Health Service of the country such as the practice of medicine; notification of infectious diseases and births and deaths; vaccination; burials; and general sanitation."[17]

Soon after, more public health legislation followed with quarantine regulations, pharmacy, anti-malarial ordinances, water sanitation, and more. Government hospitals with infections annexes were secured in large cities. These legislations, together with other administrative regulations, served as the basis for putting public health measures into action. One of these administrative regulations was related to the sanitation of villages and the health duties of Mukhtars. The Mukhtars, the traditional heads of the village, had in the British administration (as well as during the Ottoman period) important responsibilities in sanitation and hygiene, such as in reporting infectious diseases and implementing isolation or quarantine as needed. Following the British Annual Health Report of 1921, we can reconstruct the formal relationship between the Mandate public health officers and the local Mukhtars:

> All villages are inspected at regular periods by Medical Officers. In addition, Sanitary Sub-Inspectors make regular visits [ND, ZG: the sub-inspectors were usually Palestinians Arabs as opposed to medical officers who were typically British] . . . Orders in villages are given to the Mukhtar. A number of simple sanitary regulations have been drawn and published. The points raised in the regulations are examined on each visit. Mukhtars are provided in all cases with books of notification forms of births, deaths, and infectious diseases. Village Registers are kept in each village . . . In cases of necessity warning notices are given to Mukhtars to abate nuisances; and in case of noncompliance legal administrative action is taken against offenders.
>
> (Annual Report of the Department of Health, Government of Palestine for the Year 1921, p. 24)

As implied in the text cited, The Mukhtars' willingness to cooperate with the British Health Department was subject to local variations and there were cases of noncompliance. These tensions between the health administration and local communities were expressed in the smallpox epidemic that broke out in December 1921 in the southern part of Palestine, in a small village called Duwaimeh.

Duwaimeh at that time was a small Arab village lying "among the western foothills of the Judean range, four hours ride from Hebron." The people there were described as "strong and healthy and well-suited for the pursuit on which a large number of them depend for a livelihood, for they are thieves of considerable distinction."[25] The Duwaimeh population, according to the 1922 census, comprised 2,441 inhabitants, all of them Muslims.[24]

On December 19, 1921, a delegation of British public health workers visited Duwaimeh, following the notification of a smallpox case in the village. There were no public health services in Duwaimeh. Health care was given by the local traditional healer, and the Mukhtar, the head of the village, was responsible for disease notification. As there were no roads connecting to the village, the delegation arrived there riding their horses. After conducting their investigation, the public health officers were satisfied to hear that there was no other new case of smallpox. After examining the smallpox patient, the public health delegation left the village. At the time, they had not known that during their visit, 300 children were kept hidden in the village and surrounding caves.

These children were variolated by Shaheen, the local village healer, following the Mukhtar's order. Variolation is the historical practice of inducing immunity against smallpox by scratching the skin with the purulency from smallpox skin pustules taken from a smallpox patient. Although an ancient custom, in the modern period Lady Mary Wortley Montagu introduced this practice into England from Turkey in 1721. Variolation was discarded by the medical community after the introduction of the smallpox vaccine by Edward Jenner in 1796, yet variolation continued to be practiced to the 20th century mainly by local healers. Many techniques existed and there were local variations according to the local custom. Shaheen, Duwaimeh's local healer, took lymph from pocks of the original first case, a female servant of Hussein the Mukhtar, and inoculated the children on the dorsal aspect of the hand between the thumb and forefinger according to the "traditional

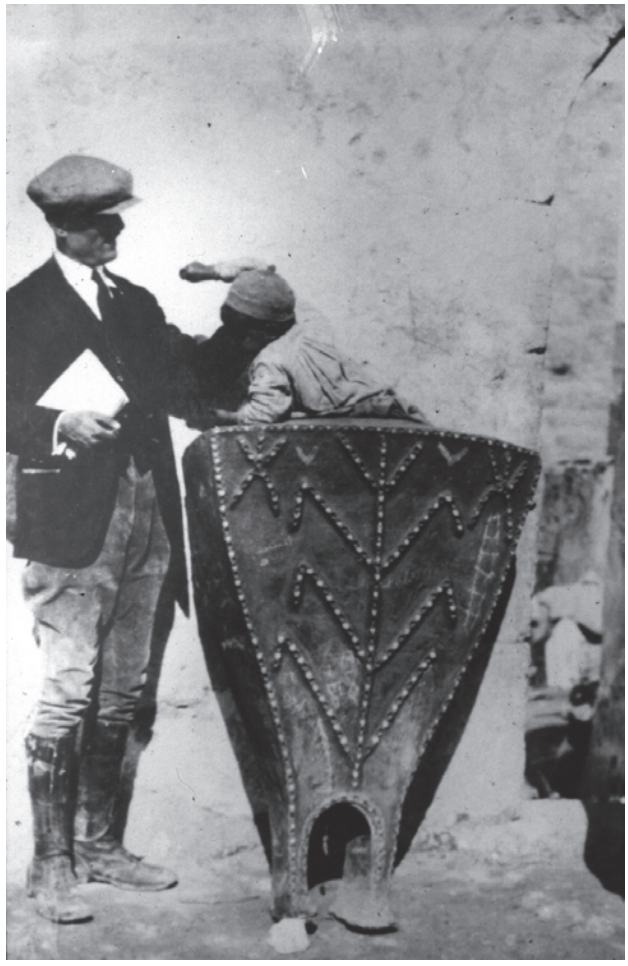
Shaheen inoculating a child. Attached to the original photograph is a thorn that was used for the inoculation. This photograph and the other three presented in this article are part of a collection found at the Israeli Central Laboratories. It can also be found at the Wellcome Library for the History of Medicine contained in an album of photographs (photograph #7) documenting the Duwaimeh outbreak. Lettering in the front of the album: "Anti-smallpox campaign, Dawaimeh—Hebron. January—February 1922". There is also a typed note stating that the album was presented by Dr. Reginald Sibley.

method of the country."[17] The servant was first seen by a physician on December 13, 1921. She was already in a pustular stage, taken into isolation in a tent some distance from the village. What was not known by the public health administration was that 300 children had already been inoculated by the local healer using infected matter from the initial case.

According to the Lancet article describing the Duwaimeh's epidemic and the British annual report of the Department of Health from 1922, 120 children out of 300 who were variolated (40%) developed smallpox.[25,26] Another 37 children were secondary and tertiary cases, infected either from the index case or from other ill children. Overall, there were 158 cases of smallpox in the village, including the index case, out of a population of 2,441 (6.5%). As we do not have the total number of children in the village, age-specific rates cannot be calculated. Interestingly, out of the 120 children who were variolated and developed smallpox, 10 children died (case fatality rate of 12.3%), while out of the 37 naturally occurring cases, six children died (case fatality rate of 16.2%). These data reflect the known fact that in the past, variolation carried with it lower fatality rates than in naturally occurring cases. This difference became irrelevant after the introduction of the much safer technique of smallpox vaccination.

The rumors on the variolated children were spread by the Mukhtar's enemies, and a hospital was quickly established in the Mukhtar's house staffed by a doctor, nurses, a cook, and servants. The British Health Department wanted to initiate an immediate vaccination campaign. According to John MacQueen, "The work of vaccination was pushed on, and in a short time most of the inhabitants had been vaccinated."[25]

Yet the vaccination campaign did not proceed according to the original British public health officials' plan. The British group needed to make a "systematic house-to-house inspection" and also to search in "close caves, corn bins, roofs, gardens . . . every hole had to be searched."[25] Public health workers were actually playing hide and seek with the children from the village. Probably the adults were not satisfied either with these new intruders and did not make their efforts easier.



Public health officer getting a child out of a cornstone. Photograph from the Israeli Central Laboratories collection.

Child with smallpox. Photograph acquired from the Israeli Central Laboratories collection.

In addition to the practical difficulties of convincing the village community to vaccinate their children in order to control the smallpox outbreak, another problem emerged. According to the official reports, apparently the vaccination lymph "proved quite unsatisfactory." Only 172 out of 2,754 vaccinations showed positive results. The smallpox vaccinations were not produced by the British Health Department, which had just recently started its work in the country. The Health Department was cooperating with the existing Pasteur Institute in Palestine, established by Dr. Leo Boehm. In 1913, Dr. Boehm, a young Zionist doctor who had emigrated from Russia to Palestine, established the Pasteur Institute for Health, Medicine and Biology in Palestine. The laboratory was part of an international health complex that also included a mother and child health center operated by Hadassah and sponsored by the Jewish New York philanthropists Nathan Strauss. Boehm, who borrowed Pasteur's name without the knowledge of the French laboratory, visited Palestine in 1906 and was astonished by the fact that under prevailing circumstances at the time, anyone suspected of having been exposed to rabies needed to be sent to Cairo or Constantinople.[27] During the First World War, Boehm's laboratory produced rabies, smallpox, and cholera vaccines for the disease-stricken Palestine population, which were also used by the Turkish army.

After the poor results of Boehm's vaccines, fresh lymph was obtained from Egypt with much better outcome and acceptance from the local population: "The natives themselves were struck by its greater potency and came forward readily enough even to be vaccinated for the third time . . . Vaccination with the 'Cairo' lymph marked the turning point in the campaign."[25] It is hard to tell whether this description accurately reflects the response of the Duwaimeh villagers, as no written material documenting their reaction to the continuous vaccination efforts remains with us. Yet, probably the new vaccine's higher "take," meaning its greater scarification effect, left its impression.

An important fact to consider is that the local healer who executed the variolation of the village's children, which brought with it grave consequences, still retained

House-to-house inspection. Photograph from the Israeli Central Laboratories collection.

his respectable position in the community. Shaheen, the local healer, was described in the British report of the outbreak as a "distinguished looking gentleman of over 50 years of age." He was part of a family of traditional healers. It is clear from his descriptions by the public health officers involved that they respected his work. Even among the Bedouin, he was considered powerful: "He was held as to have skill and experience in his profession." Nevertheless, Shaheen was sent to prison for a month "as a result of his misguided efforts to limit the spread of the disease." According to the British testimony, his reputation was by no means lessened, but rather considerably enhanced by his performance in Duwaimeh and especially after his imprisonment.[25,26]

During the British Mandate rule, smallpox was observed mainly in the Arab population of Palestine, invariably following importation from the surrounding Arab states. In 1924, another small cluster of 19 smallpox cases following variolation was observed in Palestine. According to British sources, smallpox vaccination campaigns were generally well accepted. In 1935, the British Health Department was able to state that ". . . in consequence of the high percentage of the population protected by vaccination, there is little fear of a serious spread of the disease resulting from any imported cases from neighboring infected countries." In early 1949, shortly after the establishment of the Israeli state, the appearance of smallpox in Tel Aviv among Jewish immigrants from Yemen led to the first and last mass smallpox vaccination campaign carried out by the Israel Ministry of Health. No cases were observed in Israel after 1950.[21]

CONCLUSION

Scholarship focusing on the Palestinian Arab population during the Mandate period mainly centers on the politics of Palestinian nationalism. Public health remains a relatively unexplored topic. Given the current political situation, it is not hard to understand how it is that the literature that does exist on Palestinian Arab health and medicine focuses mainly on contemporary health conditions. Another problem in the historiography of health in Palestine is that most of the studies of the history of public health focus on Zionist efforts. For the most part, they take an uncritical stance toward Western medicine. Many of them

remain in the realm of institutional history, failing to emphasize the colonial dimension of health in that period and how the Palestinian Arab community took part in this process.

We should remember that Western medicine was already entering Palestine from the 19th century, but it would be simplistic to perceive this entrance as a smooth, victorious conquest. Similar to David Arnold's observation on the history of colonial medicine in India, "There was nothing inevitable about this process of medical colonization, nor was it uncontested."[4] Part of the power of the colonial medicine discourse of the period lay in the manner in which medicine self-consciously conceived of itself as a science, based on careful local observation and eschewing the ill-informed speculation of the past and the rank superstition associated with local traditional concepts of disease and healing.

Palestine, as in other places, continued to have side by side an impressive collection of healers, conventional and unconventional, traditional, and a strong tradition of self-help. As shown in the case study of the Duwaimeh outbreak, traditional healers had a fundamental position within the local social fabric that was challenged by the British administration. Yet both the local population and even some of the health personnel who worked in the field, comprised also of local physicians and nurses, respected the local healers. Hence, the tensions between different medical worldviews should be framed as a complicated context of struggles and negotiations among those involved in public health-related disputes: the local populations, health-care workers, and British administrators. The entrance of Western medicine into Palestine, as in other colonial regimes, had its own political dimensions. The civilizing power of medicine and public health was a crucial part of colonial regimes, and within this scheme, vaccinations had an advantageous position. Yet this was not a simple and uncontested process.

Although vaccinations are considered one of the most important achievements of medicine in the 20th century, even before the discovery of antibiotics, through the course of history of medicine immunization has, more than once, engendered opposition that has even reached the level of a civil rebellion.[28–30] Recently, there has been a growing recognition of the potential embodied in historical research on opposition to vaccination, especially in its ability to serve as a vehicle for gaining better understanding of the politics of the human body and its relation to the modern state.[31–33]

The fact that for a long time the issue of vaccinations was an important component in the colonial system is an important point for historical understanding of the relationships among the state, public health personnel, and the population. Westerners brought with them various vaccines with which they wanted to vaccinate local populations. Despite their good intentions, many times this fact caused local populations to identify the vaccination policy Westerners wanted to institute with a repressive and foreign regime.

While we should not underestimate the tensions and controversies among the various healers in Palestine—conventional vs. traditional, Jewish, Muslim, or Christian, European or local—in general the private aspects of health (i.e., self-help, networks of health, and traditional healers) continued to exist and have a strong influence on everyday life, and still do today.[34–36]

Recently, health as a historical category has been integrated more fully into the Palestine/Israel historiographies. Many times, concerns of medicine and disease were overshadowed by the more immediate interest of scholars of the Middle East and Zionism in the political and diplomatic histories of Palestine/Israel. Much of this scholarship seeks to understand the origins and dynamics of the Palestinian-Israeli conflict and the development that precipitated the emergence of the state of Israel. The exploration of medicine and health can capture broad issues, cutting across a variety of policy areas, in a way that can help reconstruct a richer social history of Palestine/Israel. Public health and medicine were an important part of the Zionist project and Palestinian historiography. The intersection of health, politics, and colonialism can enable the construction of a sociocultural history of disease in Palestine. In contrast to the simplistic view that Western medicine "conquered the hearts of the natives," in fact reciprocal relationships between colonizers and local populations were far more complex in regard to perceptions of sickness and health. The Duwaimeh outbreak can also help us to reconstruct an almost forgotten history of rural Palestine in the pre-Israeli state era. Interestingly, public health reports that meticulously survey the land and its inhabitants, mainly in relation to then-prevalent infectious diseases such as malaria, trachoma, or smallpox, can serve as extraordinary documents describing the social and cultural context of Palestine and its population. Physicians, public health officials, and local healers described the life of their patients in a way that can provide social historians rich materials with which to work.

As shown in the Duwaimeh smallpox outbreak, despite the fact that the outbreak was contained and stamped out, various narratives continued to circulate among the sides vis-à-vis the event. Although the local

healer in the village was accused of being the agent responsible for spreading the disease and causing the death of many children, the healer's incarceration by the British for his conduct did not adversely affect his popularity among his neighbors; rather, just the opposite occurred. In addition to the Duwaimeh outbreak, understanding the variolation of more than 300 children gives us the opportunity to analyze the last large smallpox epidemic resulting from variolation documented and recorded in details during the 20th century.

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